

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

Applicant(s): Bian	Art Unit: 1755	<b>RECEIVED CENTRAL FAX CENTER FEB 17 2006</b>
Application No.: 10/670,534	Examiner: Michael A. Marchesi	
Filed: 9/25/03		
Title: HIGH-RATE BARRIER POLISHING COMPOSITION		
Attorney Docket No.: 03010US		
Commissioner for Patents P.O. Box 1450 Alexandria, VA 22313-1450		

**DECLARATION UNDER 37 C.F.R. § 1.132**

That I, Jinru Bian, declare the following:

1) That I am a current employee of Rohm and Haas Electronic Materials CMP Inc. (fka Rodel, Inc.); and that I have been employed at Rohm and Haas Electronic Materials for over five years in the role of a research chemist in the area of slurry development.

2) That additional chemistry-related employment experience includes the following:

**Research Associate, Research Scientist**, Gillette Research Institute, Gaithersburg, MD 20879 (1991-99).

**Group Leader** The Laboratory of Colloid & Interface Chemistry, Academia Sinica, Beijing (1982-87).

**Research Assistant**, Physical Chemistry Laboratory, Academia Sinica (1980-82).

**Chemical Engineering**, Lantian Chemical Plant, Shanxi, China (1976-78).

3) That my professional qualifications include the following:

Ph. D. in Biophysics/Biochemistry, Chemistry Department, Boston College (1991).

M.S. in Physical Chemistry, Graduate School, Academia Sinica, Beijing, (1982).

B.S in Chemical Engineering, Chem. Eng. Dep., Northwestern University, Xi'an, (1976).

- 4) That I have authored or co-authored at least five articles related to Chemical Mechanical Polishing.
- 5) That I have reviewed US Pat. Appln. No. 10/670,534 ('534), filed September 25, 2003; the USPTO action mailed November 23, 2005; EP Pat. Pub. No. 1229093 (EP '093) and Wang et al. (US Pat. Pub. No. 2003/0170991).
- 6) That EP '093 discloses hydrogen peroxide, an abrasive, an organic ammonium salt and imidazole.
- 7) That imine ( $C=NH$ ) and imine derivatives in the '534 application require a carbon to nitrogen double bond and that the nitrogen atom bonds to only one carbon atom. Imidazole is a tautomer that shares an active hydrogen atom between two nitrogen atoms with the nitrogen bonding to two carbon atoms. Because both of the nitrogen atoms in imidazole have two carbon atoms bonding to the nitrogen and neither of the nitrogen atoms has only one carbon bonding to it, it is not an imine derivative.
- 8) That hydrazine has a linear formula of  $NH_2NH_2$ , that requires a double nitrogen (N-N) structure. Since imidazole has an (N-C-N structure) that lacks the requisite double nitrogen (N-N) structure, it is not a hydrazine derivative.
- 9) That the N-N structure of hydrazine derivatives can facilitate the removal of barrier materials such as, tantalum and tantalum nitride.
- 10) That the '534 application does disclose and claim substituting hydrazine with an imidazole group to form a hydrazine derivative that contains the N-N structure.

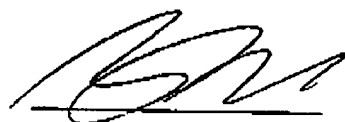
11) That since imidazole lacks the N-N structure, it is different than the claimed '534 invention.

12) Wang et al. disclose the use of quantenary ammonium compounds in general for stopping on or reducing barrier removal.

13) Wang et al. do not disclose the specific claimed quantenary ammonium salt where  $R_1$  is a substituted or unsubstituted aryl, alkyl, aralkyl, or alkaryl group and  $R_1$  has a carbon chain length of 2 to 10 carbon atoms.

14) That in my opinion, Wang et al. do not disclose or suggest the addition of the specific claimed quantenary salts; and Wang et al. teach away from the addition of quantenary ammonium salts for barrier removal slurries.

15) That I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.



Dr. Jinru Bian

February 16, 2006